

3600.100

AUG 18 1999

FILE COPY

Receipt

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of) Examiner: Not Yet Assigned
DAVID A. SPEAR ET AL.) Group Art Unit: 3745
Appln. No.: 09/343,736)
Filed: June 30, 1999)
For: SWEPT TURBOMACHINERY)
BLADE : Date: August 16, 1999

Assistant Commissioner for Patents
Washington, D.C. 20231

Attention: Customer Corrections

TECHNOLOGY CENTER 3700

OCT 25 1999

RECEIVED

REQUEST FOR CORRECTED FILING RECEIPT

Sir:

The Filing Receipt for the above-identified application requires correction in that the first-named inventor, DAVID A. SPEAR, has been omitted from the inventors listed on the filing receipt.

David A. Spear is deceased. Copies are enclosed of the Reissue Declaration, signed by Dennis N. Kantor, executor of the estate of David A. Spear, and of a Fiduciary's Probate Certificate from the State of Connecticut Court of Probate, establishing that Dennis N. Kantor has authority to act on behalf of David A. Spear. These documents bear a certificate of

09/343,736 - 063099

Express Mail showing that they were filed with the application papers in the present application.

It is respectfully requested that the Patent and Trademark Office mail a corrected Filing Receipt listing all three inventors, namely DAVID A. SPEAR, BRUCE P. BIEDERMAN and JOHN A. OROSA.

Any fee associated with this paper may be charged to Deposit Account No. 50-0409.

The applicants' undersigned attorney may be reached by telephone at (609) 921-8660. All correspondence should be directed to the below listed address.

Respectfully submitted,



Attorney for Applicants

Registration No. 26,641

DAVID M. QUINLAN, P.C.
40 Nassau Street
Princeton, NJ 08542
Facsimile: (609) 921-8651

SERIAL NUMBER 09/343,736 REISSUE	FILING DATE 06/30/99	CLASS 416	GROUP ART UNIT 3745	ATTORNEY DOCKET NO. 3600.100
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DAVID A. SPEAR, EAST HARTFORD, CT, DECEASED; BY DENNIS N. KANTOR,
EAST HARTFORD, CT, LEGAL REPRESENTATIVE; BRUCE P. BIEDERMAN,
WEST HARTFORD, CT; JOHN A. OROSA, PALM BEACH GARDENS, FL.

CONTINUING DOMESTIC DATA***

VERIFIED

THIS APPLN IS A RE OF 08/559,965 11/17/95 PAT 5,642,985
and a con of 09/874931 06/05/01

371 (NAT'L STAGE) DATA***

VERIFIED

FOREIGN APPLICATIONS***

VERIFIED

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 07/23/99

Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY CT	SHEETS DRAWINGS 7	TOTAL CLAIMS 21
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Verified and Acknowledged

Examiner's initials

DAVID M QUINLAN P C
40 NASSAU STREET
PRINCETON NJ 08542

SWEPT TURBOMACHINERY BLADE

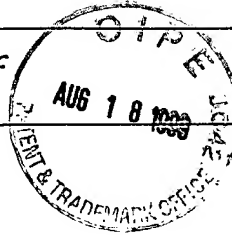
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<input type="checkbox"/>	Credit

Court of Probate, District of Manchester
District Number 077



95-0620

Estate of: Spear, David A.
aka David Alan Spear

Date of Certificate: 06/24/1999

Fiduciary's name and address:

Dennis N. Kantor, Box 280748, 330 Roberts Street, East Hartford, CT
06128-0748
Position of trust: Executor
Date of appointment: 11/28/1995

The undersigned hereby certifies that the fiduciary of the above estate has accepted appointment; executed probate bond according to law or has been excused by will or by statute; and is legally authorized and qualified to act as such fiduciary on said estate; said appointment being unrevoked and in full force as of the above date of certificate.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of this court on the above date of certificate.

COURT SEAL

Mary C. McNamara
Mary C. McNamara Judge/Ass't. Clerk

NOT VALID WITHOUT COURT OF PROBATE SEAL IMPRESSED

As used in this document, the word fiduciary includes the plural, where the context so requires.

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Karen Malatesta
KAREN MALATESTA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of

DAVID A. SPEAR ET AL.

Appln. No.: Not yet assigned

Filed: Herewith

For: SWEPT TURBOMACHINERY
BLADE



Attorney Docket No.: 3600.100

Examiner: Mark Sgantzios

Group Art Unit: 3401

Application to reissue
U.S. Patent No. 5,642,985

TECHNOLOGY CENTER 3700

OCT 25 1999

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Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

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Karen Malatesta
KAREN MALATESTA

Sir:

We, DAVID A. SPEAR, who was a United States citizen residing at
Manchester, Connecticut, at the time of his death on October 22, 1995, BRUCE P.
BIEDERMAN, a United States citizen residing at West Hartford, Connecticut, and
JOHN A. OROSA, a United States citizen residing at Palm Beach Gardens, Florida,
hereby declare and say that:

1. We believe that we are the original, first and joint inventors of the
subject matter which is claimed in the subject reissue application and
for which a reissue patent is sought on the invention entitled SWEPT
TURBOMACHINERY BLADE, the specification of which is filed
herewith.

2. We have reviewed and understand the contents of the reissue application, including the claims.

3. We acknowledge our duty to disclose to the U.S. Patent and Trademark Office all information known to be material to patentability as defined in 37 C.F.R. § 1.56.

4. We believe that the original above-identified U.S. Patent No. 5,642,985 is partly inoperative by reason of us having claimed less than we had the right to claim in that patent. Specifically, we believe that we were entitled to claims to at least the following subject matter:

A turbomachinery blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation about a fan axis with neighboring blades forming passages for a working medium gas, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage causing the formation of a shock in the gas adjacent an inner wall of a case forming an outer boundary for the working medium gas flowing through the passages;

the blade has a leading edge with an intermediate region and a tip region outward of the intermediate region and extending to a tip end of the blade, the intermediate region being swept rearward at a sweep angle that does not decrease; and

the tip region is translated forward to provide a sweep angle that causes the blade to intercept the shock.

A blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage;

the blade has a leading edge with an intermediate region and a tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region having a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

throughout the tip region the sweep angle is less than the sweep angle at the outward boundary of the intermediate region.

A blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage;

the blade has a leading edge with an intermediate region and a tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region being swept rearward at a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

the tip region is translated forward from the outward boundary of the rearwardly swept intermediate region.

Turbomachinery for a gas turbine engine, comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

each blade has a configuration enabling the turbomachinery to rotate at speeds providing supersonic working medium gas velocities at least in the vicinity of the passages proximate to the case;

each blade has a leading edge with a swept intermediate region and a swept tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region of each blade having a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

throughout the tip region the sweep angle of each blade is less than the sweep angle at the outward boundary of the intermediate region.

A gas turbine engine fan comprising a plurality of identical blades, each blade being mounted for rotation within a case circumscribing the blades and having an inner wall forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

each blade has a configuration enabling the fan to rotate at speeds providing supersonic working medium gas velocities in the vicinity of the passages proximate to the case;

each blade has a leading edge with an inner region, an intermediate region and a tip region, the inner region beginning at a root end of the blade and extending to an inward boundary of the intermediate region, and the tip region extending from an outward boundary of the intermediate region to a tip end of the blade; and

the inner region is swept forward, the intermediate region is swept rearward at a sweep angle that does not decrease, and the tip region is translated forward from the outward boundary of the intermediate region.

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A blade for a gas turbine engine rotatable within a case at speeds providing supersonic flow over at least a portion of the blade, wherein the blade leading edge has a rear swept middle region ending at a tip region that is translated forward from the end of the middle region.

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A blade for a gas turbine engine rotatable within a case at speeds providing supersonic flow over at least a portion of the blade, wherein the blade leading edge has a forward swept middle region ending at a tip region that is translated rearward from the end of the middle region.

5. All errors being corrected in the subject reissue application up to the time of filing this declaration, including the error identified above, arose without deceptive intent on our parts.

6. We hereby appoint John Swiatocha, Registration No. 27,955, Kenneth C. Baran, Registration No. 32682, and David M. Quinlan, Registration No. 26,641, as our attorneys to transact all business in the Patent and Trademark Office.

